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THE RELATIONSHIP OF OUR INDUSTRIAL RESOURCES TO NATIONAL SECURITY

My assignment today is to present some thoughts on the subject of our "Industrial Resources and National Security". I propose first, to define my terms; then to discuss the relationship of our industrial resources to our national security, in the light of those definitions; and finally, to give you my thoughts on what seem to me to be the basic elements of long term national security and to indicate what I consider to be the fundamental problems we shall face in achieving that long term national security.

One of my colleagues in these sessions, in discussing the changing relationship of Natural Resources to National Security, has defined national security as "long-term security from hostile military behavior". He then excludes from his consideration a "non-military concept of security". I find myself unwilling to accept his narrow definition. Perhaps, I had better tell you why - because National Security to me means much more than security from military attack.

For twenty-five action-packed months in the early 1950's, I had the privilege of serving as a member of the U.S. Atomic Energy Commission. The beginning of my service with the Commission coincided

with the launching of the first great expansion in our atomic program. I was thoroughly steeped, therefore, in the concept of national security as synonymous with military security or security from hostile military behavior. As time passed, I began to question this concept and I re-read, many times, the Declaration of Purpose of the Atomic Energy Act of 1946. I read it to you now in its appears in its slightly modified form in the 1954 version of the Act.

"It is declared to be the policy of the United States that -

- a. The development, use and control of atomic energy shall be directed so as to make the maximum contribution to the general welfare, subject at all times to the paramount objective of making the maximum contribution to the common defense and security; and -
- b. The development, use and control of atomic energy shall be directed so as to promote world peace, improve the general welfare, increase the standard of living, and strengthen free competition in private enterprise."

Pondering these injunctions over a period of many months, I became convinced that our lawmakers were discussing and defining national security in terms much broader than those relating merely to offensive or defensive military strength. I noted their concern about the promotion of world peace, - about the improvement of the general welfare of our people, about the strengthening of our economic systems by encouraging free competition in private enterprise. And, so today, I view national security as a

Security involving first, reasonable, but not absolute, defensive security from military action initiated by others; second, the ability, readiness and willingness to retaliate if effective force should unprovoked attack occur; third, the recognition and alleviation of internal tensions arising out of shortages of men, money or materials necessary to support and carry forward our dynamic expanding economy with a steadily increasing standard of living for all of our people; and fourth, security in the personal sense of owning - each of us - the right to speak, write, worship and to work in accordance with the dictates of our individual consciences. To me, therefore, military security is only one aspect of our nation's security.

It is within this framework or definition of national security, then, that I intend to discuss the relationship of our Industrial Resources to our National Security.

As I view them, our Industrial resources include the supply of energy necessary to supplement, replace and multiply the physical energies of our working force, the plant and equipment necessary to make possible the utilisation of that energy, - the human resources necessary for the design, construction, programming, control and productive utilization of that plant and equipment, - and the financial wherewithal to provide the plant and equipment and to pay the working force involved. Viewed in the whole, we might say that these constitute the mechanics of life as we know

it in the United States today. Literally, our industrial resources consist of a combination of plant, men, money and materials.

Looking first at the military aspects of our national security we find that in World War I and, again in World War II, ultimate victory came as a result of a stupendous industrial effort putting up our soldiers, sailors and airmen. Men in the military ranks there were innumerable in abundance, but they were effective only to the extent that the supplies, the munitions and the other materials of war were furnished to them by a great industrial machine - in fact, by the greatest industrial machine the world has ever known. And this machine was manned by millions who in their own turn were provided here at home with a diminished but nevertheless, high standard of living - again, even in war time, the highest standard of living the world had ever known.

In World War II a two billion dollar gamble involving a combination of the most creative and ingenious scientific and engineering brains in this nation with the productive talents and energies of a wide variety of types and sizes of our industries paid off in the development and production of the atomic bomb. Despite the frightful loss of life at Hiroshima and Nagasaki, it seems a realistic evaluation that the results of this gamble reduced by an even greater number the total loss of life on both sides which must have occurred had we been forced to invade Japan. The scientist devised but industry had to produce the product under time schedules that even today seem fantastically difficult to accomplish.

It used to be said, that an army fights on its stomach. While this is still true, it must be agreed that a modern army may be well fed and yet be a sitting duck unless it is supplied at all times and in all places with the most modern and effective weapons and other devices of warfare. Back of every modern military power there must be tremendous industrial versatility and strength. And as our weapons - atomic and hydrogen - approach the potential of ultimate destructive force, even the industrial power may be rendered worthless at the advent of the conflict. For in full scale, all out war, we and our enemies may well be forced to fight with those weapons and devices which are in being at the moment the first blow is struck.

Thus it seems reasonable to assert that national security in the military sense today is largely a function of forces in being and weapons and other devices of warfare in being. This is to say that our military strength is a deterrent strength - that unless we are strong, we run the grave risk of becoming a soft target for those who have chosen to become or remain strong. And it must be abundantly clear that without the genius and productivity of our industrial organizations, we cannot maintain a posture of military strength and readiness.

Wasteful - you say... Admittedly this process is wasteful, but unless we expend a substantial portion of our industrial resources for national defense now, we cannot gain that precious time necessary to

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achieve a reconciliation of the divergencies that create wars. I think it might be said that this progress has just made possible the first step toward what we may be an ultimate solution to the tensions in the Middle East. It seems obvious that the presence of strong elements of our fleet in the eastern Mediterranean last year dissuaded the Soviet from any plans they may have had for sending Russian armed forces to that area. It is the same military strength based upon the products of our industrial organizations that puts the teeth into the newly approved Eisenhower Doctrine.

Here, then, we see a significant relationship between our industrial resources and our national security when national security is viewed in the limited sense of military security, both defensive and offensive. It is essentially a restraining force we are employing, - a restraint upon the free play of international emotions - a deterrent to aggression - a means to gain time as our political forces and diplomatic techniques are exerted on behalf of an enduring peace.

But it seems clear to me that to relate the potential of our industrial resources only to the preventive task of promoting the National Security in a military sense is to deprive our nation of its greatest potential asset as we lead the free world toward the goal of ultimate peace and greater prosperity for all.

Let me now - in light of that assertion - examine our industrial resources as a positive power for promoting our own long term National Security by helping to lift from other peoples some of the burdens that make them less fortunate and less independent than we are. We are mindful of the Biblical injunction that "Man does not live by bread alone", but I think we must recognize too, that without bread and all that it signifies, man simply cannot live - or at least, he will not live in peace.

It is my conviction that only to the extent that the standard of material living is raised significantly for all members of the world's family will we add significantly to the prospects for an enduring peace and thus to our own National Security and well being. The standard of living in a country bears a direct relationship to the utilization of mechanical energy to extend and replace the work of the individual man. Normally, this utilization is accomplished through the industrial process. In support of this statement, Dr. John Hutcheson, Vice President for Engineering of the Westinghouse Electric Corporation, recently made this interesting comparison:

In the United States we consume in the generation of electrical power an average of 3 tons of coal per person per year. In

Europe, outside of Russia, there is consumed about 2 1/2 tons of coal per person per year,

In Japan about one ton per person per year and in the rest of Asia about 100 pounds of coal per person per year.

Now I doubt that anyone in this audience would question the statement that the standard of living for the individual in these geographic areas declines in just about the proportion that the generation of electrical energy per capita declines.

In our country we know that our standard of living has been rising as ever greater amounts of energy have been used to increase the productivity of the individual worker in industry. Once the pattern of increase in production per worker is begun it continues to increase. Our population has doubled since the start of this century. But our consumption of electric energy has been doubling every decade, or nearly so, since 1900. No one has ordered that this be done. It has resulted from the demands of individuals for more of the comforts of life. And these demands are not diminishing. So it is that in this country we look upon a population increase as an addition to our markets - not as a curse that must result in the further dividing up of already inadequate resources, - food, fuel and shelter, - among ever larger numbers of people.

What is the measure of our industrial resource - this industrial machine which continues to grow as our increasing population and our individual desires for goods provide ever larger markets? We managed to fight a war without materially lowering our living standards. We now carry a defense load that requires more than half of our national budget. Yet this load - large as it is - represents only 10% of our gross national product. And the real income of our people

has risen steadily throughout the past twenty years until today more people enjoy the comforts of modern life than ever before.

I could go on quoting statistics, but I believe you recognize the point I am making. Let's simply agree that these industrial resources - the products of the genius of our scientists, engineers, financiers and managers - have provided a superior material existence for all of us. They have provided and are providing the support for our military strength. Now I assert that their truly great potential lies in the supporting of our world leadership through the extension of the products of their peculiar genius to the peoples of other lands.

Since the end of World War II we have given to other countries more than fifty billions of dollars in economic and military aid. The bulk of this money has gone to European countries to offset and remedy conditions of life which seemed to make particular areas susceptible to communist subversion and ultimate domination. Some portion of this has gone into programs aimed at increasing the workers' productivity. More could be directed to this purpose if the countries involved can be encouraged to accept such assistance. Increasing numbers of European industrialists and production people are visiting this country in an effort to understand how and why our industry works as it does. Most of the countries involved are reasonably well advanced in technology and thus are able to adopt and use effectively many of our production techniques.

But there are many, many areas of the world where we must start from scratch. Before increasingly large amounts of mechanical energy can be utilized to speed the improvements in living standards that are so necessary to the relieving of demographic, economic, and political pressures in those areas, a start must be made on improvements in food production, in public health measures and in public administration. All of these things can be done and should be done - and the fact that they can be done derives from the industrial resources of this nation. Our productive economy can produce more than enough for us. It can produce both the materials and the men necessary to improve the conditions of life wherever the people of a backward country are willing to help themselves.

Just last week, the chairman of a Senate Foreign Relations Subcommittee, Senator MacClellan together with Senator Hickenlooper stated, after a 30 month study of the subject, that our technical assistance programs is the cheapest and most effective of all foreign aid programs. Again I repeat, technical assistance, in agriculture, industry, health and administration is possible because our industrial resources are productive enough to create surpluses of know how as well as goods. And these can be made available to others who need and desire such assistance as they attempt to better conditions in their own countries. This, to me, is the positive and truly important relationship of our industrial resources to our National Security.

To summarize, it seems to me that the challenge and opportunity facing us as a nation rests to an important extent on our industrial

resources. We must remain strong militarily to protect ourselves and other freedom loving peoples from potential aggressors. We must remain strong internally to insure an increasingly high standard of living for an increasingly larger percentage of our own people. We must remain strong so that we may provide to the rest of the world, to the extent that they require and desire it, technological and production and managerial assistance aimed at improving the standard of living for all peoples who will help themselves. And the strength of which I speak is a strength composed of national integrity, and leadership buttressed by our industrial resources.

As I conclude, let me point out again that our industrial resources are comprised of men, money and materials and the plants in which these ingredients, in proper mix are transformed into useful goods. Dealing with these three principal ingredients in reverse order, we can say that materials present no immediate problem. We are blessed by ample supplies of most of the basic materials required in an industrial economy.

Money, - we will have so long as we do not remove all incentives from our economic operation. The competitive enterprise system thrives on incentive and competition. If we tax away so much of the profits of our individual laborers or of the income of our corporations that the desire to improve our lot is lessened materially, we will find ourselves members of a contracting economy.

When it comes to men, we find a quite different picture. The single, most precious ingredient in any society, organization or process is

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manpower - intelligent well-trained manpower. Our industrial resources as a nation have as their most basic ingredient a continuing supply of leadership talent in a wide variety of specialized fields.

As an industrial society, we are finding it difficult to keep up with the increasing demand for men trained in the sciences and in engineering. To an extent this demand is one of numbers, but the future challenges facing this nation and threatening our National Security are ones involving simply the numbers of scientists and engineers to be available to our Nation over the years to come. We need to improve the quality of the education we offer in these fields. This, the colleges and universities are striving to do. Just as importantly, we must encourage more of our particularly capable young people to study in these fields. And where, better than in your hands - the science teachers of this nation - can we place the responsibility for increasing the interest of your students in the undertaking of such careers?

It has been a pleasant and rewarding experience for me to discuss with you this subject of the relationship of our industrial resources to our National Security. I sincerely hope I have made clear my conviction that these resources form a large and important part of our ability to provide to other peoples in all parts of the world, the materials, the devices, the manpower and the know how necessary to effect an improvement in living standard everywhere. To the extent that we do so utilize a portion of our industrial

resources, we will have increased the probabilities that peace will become a reality and thus our own National Security assured. Both selfishly and in the highest tradition of our Christian faith, this is a goal for which we must strive passionately.